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Title: Tutorial on Scalable Cloud-Databases in Research and Practice

Abstract:

The combination of database systems and cloud computing is extremely attractive: unlimited storage capacities, elastic scalability and as-a-service models seem to be within reach. This tutorial gives an in-depth survey of existing solutions for cloud databases that evolved in the last years and provides classification and comparison. This includes real-world systems, research approaches as well as a review of basic building blocks found in most cloud data stores. In practice however, there are unsolved problems. Latency, scalable transactions, SLAs, multi-tenancy, abstract data modelling, elastic scalability and polyglot persistence pose daunting tasks for many applications. Therefore, we conclude with „Orestes“, a database-as-a-service middleware aimed at tackling these problems through an integrative approach.